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EXAMINER	
SIVJI, NIZAR N	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,664	KIM ET AL.	
	Examiner	Art Unit	
	NIZAR SIVJI	4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claim

1. Claim 1 – 13 are currently pending in this application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 1, 3, 4, 9, 10, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (Moore) Patent No. 6075989 and further in view of Ghosh Patent No. 5764188.

As Per Claim 1: Moore teaches a system for tracking position of a mobile unit in a mobile communication system, comprising

a plurality of beacons installed within a cell coverage of a base station, each beacon having its sub-coverage and transmitting a pilot signal to the mobile unit

in the sub-coverage (i.e., In any type of handoff, the mobile station can recognize only those PN offsets of base station sectors operating within its same carrier frequency. As a result, a mobile communication signal hard handoff from one carrier frequency to another carrier frequency may be initiated by a mobile station upon receipt by the mobile station of a pilot signal from a pilot beacon transmitter Col 2 L 39 – 45) ;

a base station controller for checking whether beacon information is included in a Pilot Strength Measurement Message (PSMM) signal upon receiving the PSMM signal from the mobile unit via a base transceiver station the base station controller transmitting position information including the beacon information if the beacon information is included in the PSMM signal, the base station controller transmitting neighbor list information on base transceiver stations adjacent to the mobile unit if the beacon information is not included in the PSMM signal (i.e., In digital cellular systems--such as time division multiple access and code division multiple access systems, hard handoffs are generally initiated by a mobile station based on measurements of local pilot signals emanating from neighboring BTSs, wherein each pilot signal has an associated PN offset and represents a specific sector in a BTS coverage area. In CDMA systems, when the energy (Ec/Io) of a pilot signal measurement reaches a threshold, the mobile station initiates a handoff via a PSMM sent to the source CBSC, the message containing the pilot signal strength energy measurement. Upon receipt of the PSMM, the source CBSC determines via a database parameter table that a hard handoff is required Col 2 L 13 – 26. Moore further discusses that Global Position Satellite system are initiated by the base site. Upon

receipt of mobile transmitted signal 107, the base site uses the mobile unique PN sequence as a mobile identifier Col 5 L 18 – 21).

Moore does not discuss in detail a position-tracking device for extracting information on the corresponding beacon from its database by using the position information upon receiving the position information including the beacon information from the base station controller, the position-tracking device further tracking/determining the position of the mobile unit by using the information on the corresponding beacon, or for tracking/determining position of the mobile unit by a conventional position-tracking method by using the neighbor list information on the adjacent base transceiver stations upon receiving the neighbor list information on the base transceiver stations adjacent to the mobile unit from the base station controller.

However, the preceding limitation is known in the art of communications. Ghosh teaches that location finding function is desired by the subscriber 200, it is preferable to attempt to find three different base stations, one for each ray so that sufficient information is available to accurately estimate the location. Thus, to connect to three base sites the rakes 210, 220 and 230 are adjusted so that at least three base unit signals are decoded. If available, emergency pilot generators (such as auxiliary base unit 121 of FIG. 1) physically located between the base sites could be activated in response to a beacon request in order to blanket the area with additional reference signals, allowing the subscriber to make location estimates based on these pilot generators as well as the standard base sites. These auxiliary units would have a different PN offset than the surrounding base stations, and would typically be equipped

with a GPS receiver for proper synchronization/timing (Col 3 L 62 - Col 4 L 10). Therefore, it is obvious to one having ordinary skill in the art at the time the invention was made that a position-tracking device for extracting information on the corresponding beacon from its database by using the position information upon receiving the position information including the beacon information from the base station controller, the position-tracking device further tracking/determining the position of the mobile unit by using the information on the corresponding beacon, or for tracking/determining position of the mobile unit by a conventional position-tracking method by using the neighbor list information on the adjacent base transceiver stations upon receiving the neighbor list information on the base transceiver stations adjacent to the mobile unit from the base station controller. Thus, determining the location of the communicating unit in the CDMA system.

As Per Claim 3: Moore and Ghosh teaches the system of claim 1 as discussed above. Moore further teaches that wherein the position information transmitted from the base station controller to the position-tracking device include pilot number (PN) information of the corresponding beacon, delay information representing a distance from the center of the corresponding beacon to the mobile unit, and time stamp information representing measurement time of the mobile unit (i.e., As mobile station 103, having established communication link 107 with base site 101, travels toward hard handoff seam 140, handoff scan receiver 304 serves to detect communication signal 107 and facilitate the need for a hard handoff, according to a preferred embodiment of the present invention as follows. First, handoff scan receiver collects hard handoff candidate parameters

associated with all local mobile stations including mobile station 103. The hard handoff candidate parameters include mobile station unique long codes embedded in each mobile station ESN to facilitate mobile station identity, the carrier frequencies associated with all local mobile communication signals, and the candidate mobile station time delay intervals as measured between each mobile station and its serving, or source, base site. The hard handoff parameters are collected by local base sites, such as base sites 101 and 105 from local mobile stations and are then forwarded to handoff scan receiver 304 via scan receiver input 376. The local base sites forward a set of hard handoff candidate parameters associated a local mobile station, such as mobile station 103, when the time delay interval associated with the local mobile station increases to a value above a predetermined threshold Col 6 L 36 – 54).

As Per Claim 4: Moore and Ghosh teaches the system of claim 1 as discussed above. Ghosh further teaches that wherein the information on the corresponding beacon which is extracted from the database of the position-tracking device includes latitude, longitude, coverage radius of the corresponding beacon and other information on environments of the corresponding beacon (i.e., When a location finding function is desired by the subscriber 200, it is preferable to attempt to find three different base stations, one for each ray so that sufficient information is available to accurately estimate the location. Thus, to connect to three base sites the rakes 210, 220 and 230 are adjusted so that at least three base unit signals are decoded. If available, emergency pilot generators (such as auxiliary base unit 121 of FIG. 1)physically located between the base sites could be activated in response to a beacon request in order to

blanket the area with additional reference signals, allowing the subscriber to make location estimates based on these pilot generators as well as the standard base sites. These auxiliary units would have a different PN offset than the surrounding base stations, and would typically be equipped with a GPS receiver for proper synchronization/timing Col 3 L 62 – Col 4 L 10).

As Per Claim 9: Moore teaches a method for tracking position of a mobile unit in a communication system including the mobile unit, beacons, a base station controller and a position-tracking device, the method comprising:

checking whether beacon information is included in a Pilot Strength Measurement Message (PSMM) signal when the base station controller receives the PSMM signal from the mobile unit (i.e., The pilot beacon transmitter facilitates mobile station communication signal hard handoff (i.e. from a first carrier frequency associated with a source BTS sector to a second carrier frequency associated with a target BTS sector) by transmitting a pilot signal on the carrier frequency of the source BTS sector. Since the pilot beacon transmitter operates at a lower power than the BTS sector in which it is co-located, it provides a pilot signal for acquisition by a mobile station entering its coverage area. Upon acquisition of the pilot beacon signal by the mobile station, a PSMM containing the pilot signal energy measurement sent to the source CSBS triggers the appropriate hard handoff sequence Col 2 L 45 – 57);

transmitting position information including the beacon information from the base station controller to the position-tracking device if the PSMM signal from the mobile unit contains the beacon information (i.e., In digital cellular systems--such as

time division multiple access and code division multiple access systems, hard handoffs are generally initiated by a mobile station based on measurements of local pilot signals emanating from neighboring BTSs, wherein each pilot signal has an associated PN offset and represents a specific sector in a BTS coverage area. In CDMA systems, when the energy (Ec/Io) of a pilot signal measurement reaches a threshold, the mobile station initiates a handoff via a PSMM sent to the source CBSC, the message containing the pilot signal strength energy measurement. Upon receipt of the PSMM, the source CBSC determines via a database parameter table that a hard handoff is required Col 2 L 13 – 26. Moore further discusses that Global Position Satellite system and initiated by the base site. Upon receipt of mobile transmitted signal 107, the base site uses the mobile unique PN sequence as a mobile identifier Col 5 L 18 – 21);

Moore does not discuss in detail a extracting information on the corresponding beacon from the database of the position-tracking device when the position-tracking device receives the position information including the beacon information from the base station controller, and tracking/determining the position of the mobile unit using the information on the corresponding beacon.

However, the preceding limitation is known in the art of communications. Ghosh teaches that location finding function is desired by the subscriber 200, it is preferable to attempt to find three different base stations, one for each ray so that sufficient information is available to accurately estimate the location. Thus, to connect to three base sites the rakes 210, 220 and 230 are adjusted so that at least three base unit signals are decoded. If available, emergency pilot generators (such as auxiliary base

unit 121 of FIG. 1) physically located between the base sites could be activated in response to a beacon request in order to blanket the area with additional reference signals, allowing the subscriber to make location estimates based on these pilot generators as well as the standard base sites. These auxiliary units would have a different PN offset than the surrounding base stations, and would typically be equipped with a GPS receiver for proper synchronization/timing (Col 3 L 62 - Col 4 L 10). Therefore, it is obvious to one having ordinary skill in the art at the time the invention was made that a position-tracking device for extracting information on the corresponding beacon from its database by using the position information upon receiving the position information including the beacon information from the base station controller, the position-tracking device further tracking/determining the position of the mobile unit by using the information on the corresponding beacon, or for tracking/determining position of the mobile unit by a conventional position-tracking method by using the neighbor list information on the adjacent base transceiver stations upon receiving the neighbor list information on the base transceiver stations adjacent to the mobile unit from the base station controller. Thus determining the location of the communicating unit in the CDMA system.

As Per Claim 10: Moore and Ghosh teaches method of claim 9 as discussed above. Moore teaching further comprising transmitting neighbor list information on the base transceiver stations adjacent to the mobile unit to the position-tracking device if the PSMM signal received from the mobile unit does not contain the beacon information, tracking/determining the position of the mobile unit by a conventional position-tracking

method through using the neighbor list information when the position-tracking device receives the neighbor list information from the base station controller (i.e., In digital cellular systems--such as time division multiple access and code division multiple access systems, hard handoffs are generally initiated by a mobile station based on measurements of local pilot signals emanating from neighboring BTSs, wherein each pilot signal has an associated PN offset and represents a specific sector in a BTS coverage area. In CDMA systems, when the energy (Ec/Io) of a pilot signal measurement reaches a threshold, the mobile station initiates a handoff via a PSMM sent to the source CBSC, the message containing the pilot signal strength energy measurement. Upon receipt of the PSMM, the source CBSC determines via a database parameter table that a hard handoff is required Col 2 L 13 – 26. Moore further discusses that Global Position Satellite system and initiated by the base site. Upon receipt of mobile transmitted signal 107, the base site uses the mobile unique PN sequence as a mobile identifier Col 5 L 18 – 21).

As Per Claim 11: Moore and Ghosh teaches method of claim 9 as discussed above. Moore teaches wherein the position information including the beacon information, which the base station controller transmits to the position-tracking system, includes pilot number (PN) information of the corresponding beacon, delay information representing a distance from the center of the corresponding beacon to the mobile unit, and time stamp information representing measurement time of the mobile unit(i.e., As mobile station 103, having established communication link 107 with base site 101, travels toward hard handoff seam 140, handoff scan

receiver 304 serves to detect communication signal 107 and facilitate the need for a hard handoff, according to a preferred embodiment of the present invention as follows. First, handoff scan receiver collects hard handoff candidate parameters associated with all local mobile stations including mobile station 103. The hard handoff candidate parameters include mobile station unique long codes embedded in each mobile station ESN to facilitate mobile station identity, the carrier frequencies associated with all local mobile communication signals, and the candidate mobile station time delay intervals as measured between each mobile station and its serving, or source, base site. The hard handoff parameters are collected by local base sites, such as base sites 101 and 105 from local mobile stations and are then forwarded to handoff scan receiver 304 via scan receiver input 376. The local base sites forward a set of hard handoff candidate parameters associated a local mobile station, such as mobile station 103, when the time delay interval associated with the local mobile station increases to a value above a predetermined threshold Col 6 L 36 – 54).

As Per Claim 12: The method of claim 9, wherein the information on the corresponding beacon, which is extracted from the database of the position-tracking device includes latitude, longitude, coverage radius of the corresponding beacon and other in-formation on environments of the corresponding beacon(i.e., When a location finding function is desired by the subscriber 200, it is preferable to attempt to find three different base stations, one for each ray so that sufficient information is available to accurately estimate the location. Thus, to connect to three base sites the rakes 210, 220 and 230 are adjusted so that at least three base unit signals are decoded. If available,

emergency pilot generators (such as auxiliary base unit 121 of FIG. 1)physically located between the base sites could be activated in response to a beacon request in order to blanket the area with additional reference signals, allowing the subscriber to make location estimates based on these pilot generators as well as the standard base sites. These auxiliary units would have a different PN offset than the surrounding base stations, and would typically be equipped with a GPS receiver for proper synchronization/timing Col 3 L 62 – Col 4 L 10).

4. **As Per Claim 13:** Moore and Ghosh teaches the method of claim 9 as discussed above. Ghosh further teaches wherein the tracked information on the position of the mobile unit is employed in the location-based supplemental service of the mobile communication system (i.e., location finding function is desired by the subscriber 200, it is preferable to attempt to find three different base stations, one for each ray so that sufficient information is available to accurately estimate the location. Thus, to connect to three base sites the rakes 210, 220 and 230 are adjusted so that at least three base unit signals are decoded. If available, emergency pilot generators (such as auxiliary base unit 121 of FIG. 1) physically located between the base sites could be activated in response to a beacon request in order to blanket the area with additional reference signals, allowing the subscriber to make location estimates based on these pilot generators as well as the standard base sites. These auxiliary units would have a different PN offset than the surrounding base stations, and would typically be equipped with a GPS receiver for proper synchronization/timing (Col 3 L 62 - Col 4 L 10).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (Moore) Patent No. 6075989 and further in view of Ghosh Patent No. 5764188 and further in view of Haartsen Patent No. 6393007

As Per Claim 2: Moore and Ghosh teaches the system of claim 1 as discussed above.

Moore and Ghosh does not discuss in detail that wherein the radius of the sub-coverage of the beacon ranges from about 5 m to about 300 m.

However, the preceding limitation is known in the art of communications. Haartsen teaches that several radio access units 2 may operate at the premises 1, having overlapping service areas, and in those radio access units 2 of adjacent premises may have overlapping service or coverage areas. In the case of radio access units 2 operating in according with the existing low power cordless TDMA (Time Division Multiple Access) technologies, such as designated CT3, PHS and DECT, each of the radio access units 2 and the radio communication units have a limited coverage area, having the size of a pico-, nano- or microcell, the radius of which ranges from a few meters, up to 10 m and 400 m (Col 6 L 51 – Col 7 L 5). Therefore, it is obvious to one having ordinary skill in the art at the time the invention was made that the radius of the sub-coverage of the beacon ranges from about 5 m to about 300 m. Thus, allow an operator to serve a wide coverage area with many users and only a limited spectrum.

6. Claim 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (Moore) Patent No. 6075989 and further in view of Ghosh Patent No. 5764188 and further in view of Karr et al. Patent No. 6952181.

As Per Claim 5: Moore and Ghosh teaches the system of claim 1 as discussed above.

Moore and Ghosh does not discuss in detail wherein each beacon has the same radius of coverage and a plurality of the beacons are installed uniformly to cover the whole area of the cell coverage of a particular base station.

However, the preceding limitation is known in the art of communications. Karr discusses that a given base station may contain no sectors (not shown), thus radiating and receiving signals in a 360 degree Omni directional coverage area pattern, or the base station may contain "smart antennas" (not shown) which have specialized coverage area patterns (Col 31 L 35 – 40). Therefore, it is obvious to one having ordinary skill in the art at the time the invention was made that each beacon has the same radius of coverage and a plurality of the beacons are installed uniformly to cover the whole area of the cell coverage of a particular base station. Thus, ensuring seamless coverage in a geographical area.

As Per Claim 6: Moore and Ghosh teaches the system of claim 1 as discussed above.

Moore and Ghosh does not discuss in detail wherein each beacon has different radius of coverage and a plurality of the beacons are installed at only particular regions within cell coverage of a particular base station to cover only the particular regions.

However, the preceding limitation is known in the art of communications. Karr discusses base stations having three sector coverage area patterns. Shown in FIG. 2, each sector for base station 122a through 122g contains three sectors, labeled a, b, and c, which represent antennas that radiate and receive signals in an approximate 120 degree arc, from an overhead view. As one skilled in the art will understand, actual base station coverage areas generally are designed to overlap to some extent, thus ensuring

seamless coverage in a geographical area (Col 31 L 41 – 48). Therefore, it is obvious to one having ordinary skill in the art at the time the invention was made that each beacon has different radius of coverage and a plurality of the beacons are installed at only particular regions within cell coverage of a particular base station to cover only the particular regions. Thus, ensuring seamless coverage in a geographical area.

7. Claim 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (Moore) Patent No. 6075989 and further in view of Ghosh Patent No. 5764188 and further in view of Soliman Patent No. 6321090.

As Per Claim 7: Moore and Ghosh teaches the system of claim 1 as discussed above.

Moore and Ghosh does not discuss in detail wherein a plurality of the beacons are installed so that virtual PN is provided toward inside the border of the cell coverage of a particular base station at regions within the coverage of the particular base station where only one pilot signal is sensed.

However, the preceding limitation is known in the art of communications. Soliman teaches that each base station covers a `cell` within which a mobile unit may communicate. A cell covers a limited geographic area and routes calls from mobile units to and from a telecommunications network via a mobile switching center. The coverage area of a typical cellular telecommunications system is divided into several cells. Different communications resources such as frequencies are often allocated to each cell to maximize communications system resources. When a mobile unit moves from a first cell to a second cell, a handoff is performed to assign new system resources associated with the second cell Col 1 L 23 – 34) Therefore, it is obvious to one having ordinary skill

in the art at the time the invention was made that a plurality of the beacons are installed so that virtual PN is provided toward inside the border of the cell coverage of a particular base station at regions within the coverage of the particular base station where only one pilot signal is sensed. Thus, maximizing communications system resources.

As Per Claim 8: Moore and Ghosh teaches the system of claim 1 as discussed above.

Moore and Ghosh does not discuss in detail wherein each beacon has the same radius of coverage and a plurality of the beacons are installed so that virtual PN is provided to a cell coverage of a particular base station and to a cell coverage of adjacent base stations at regions within the cell-coverage of the particular base station where only one pilot signal is sensed.

However, the preceding limitation is known in the art of communications. Soliman teaches that each base station covers a `cell` within which a mobile unit may communicate. A cell covers a limited geographic area and routes calls from mobile units to and from a telecommunications network via a mobile switching center. The coverage area of a typical cellular telecommunications system is divided into several cells. Different communications resources such as frequencies are often allocated to each cell to maximize communications system resources. When a mobile unit moves from a first cell to a second cell, a handoff is performed to assign new system resources associated with the second cell Col 1 L 23 – 34) Therefore, it is obvious to one having ordinary skill in the art at the time the invention was made that a plurality of the beacons are installed so that virtual PN is provided toward inside the border of the cell coverage of a

particular base station at regions within the coverage of the particular base station where only one pilot signal is sensed. Thus, maximizing communications system resources.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Karr et al. US Pub. No. 2003/0222820 Dec 4, 2003

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIZAR SIVJI whose telephone number is (571)270-7462. The examiner can normally be reached on Mon - Fri 8:00AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis West can be reached on 5712727859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NIZAR SIVJI/
Examiner, Art Unit 4172

/Lewis G. West/
Supervisory Patent Examiner, Art Unit 4172